

What Is Claimed Is:

1. An apparatus for aligning a dispenser, comprising:
  - a table having a first alignment mark;
  - an alignment plate provided along at least one side of the table;
  - at least one syringe supplying a dispensing material to the alignment plate through a nozzle provided at one end portion thereof to form a second alignment mark;
  - a first image camera provided along a side of the syringe and detecting an image of the second alignment mark;
  - a second image camera detecting an image of the first alignment mark; and
  - an alignment control unit aligning the image of the second alignment mark and a first reference position, and aligning the image of the first alignment mark and a second reference position.
2. The apparatus according to claim 1, wherein the first alignment mark is engraved into the table.
3. The apparatus according to claim 1, wherein the first alignment mark is formed of light reflecting material.

4. The apparatus according to claim 1, wherein the first alignment mark includes aluminum oxide.
5. The apparatus according to claim 1, wherein the first and second alignment marks have horizontal and vertical patterns.
6. The apparatus according to claim 1, wherein the alignment plate includes glass having an area smaller than an area of the table.
7. The apparatus according to claim 1, wherein the alignment control unit aligns the image of the first image camera and the first reference position by moving the table.
8. The apparatus according to claim 1, wherein the alignment control unit aligns the image of the second image camera and the second reference position by moving the second image camera.
9. The apparatus according to claim 1, wherein the alignment control unit comprises:
  - a first display part displaying an image of the second alignment mark detected by the first image camera and the first reference position;

a second display part displaying the image of the first alignment mark detected by the second image camera and the second reference position; and

a control unit driving the table along at least one of X- and Y-directions to align the image of the second alignment mark and the first reference position, and driving the second image camera along at least one of the X- and Y-directions to align the image of the first alignment mark and the second reference position.

10. The apparatus according to claim 1, wherein a substrate of a liquid crystal display panel is loaded onto the table.

11. The apparatus according to the claim 10, wherein an area of the alignment plate is less than an area of the substrate.

12. A method for aligning a dispenser, comprising:

attaching an alignment plate along at least one side of a table having a first alignment mark;

forming a second alignment mark on the alignment plate using a first syringe;

moving the table along at least one of X- and Y-directions;

detecting an image of the second alignment mark using a first camera and aligning the image of the second alignment mark and a first reference position; and

detecting an image of the first alignment mark using a second camera and aligning the image of the first alignment mark and a second reference position.

13. The method according to claim 12, wherein moving the table aligns the image of the second alignment mark and the first reference position.

14. The method according to claim 12, wherein aligning the image of the first alignment mark and the second reference position includes moving the second image camera along at least one of the X- and Y-directions.

15. The method according to claim 12, further comprising loading a substrate of a liquid crystal display panel onto the table.

16. The method according to claim 15, wherein a surface of the alignment plate attached to the table is coplanar to a surface of the substrate loaded onto the table.

17. The method according to claim 12, further comprising loading a substrate of a liquid crystal display panel onto the table before the attaching an alignment plate along at least one side of the table.

18. The method according to claim 12, further comprising loading a substrate of a liquid crystal display panel onto the table after the attaching an alignment plate along at least one side of the table.

19. The method according to claim 12, further comprising:  
loading a substrate of a liquid crystal display panel onto the table; and  
forming a seal pattern on the substrate using at least one second syringe after the image of the first alignment mark is detected using the second camera and aligned with the second reference position.

20. The method according to claim 19, wherein the seal pattern includes an opening.

21. The method according to claim 19, wherein the seal pattern includes a closed loop pattern.

22. The method according to claim 12, further comprising:

forming third alignment marks on the alignment plate attached to the table using a plurality of second syringes; and

detecting images of the third alignment marks using third image cameras provided along a side portion of the second syringes and aligning the second syringes.

23. The method according to claim 12, further comprising:

descending at least one second syringe to contact the alignment plate attached to the table; and

ascending the second syringe to form a distance between a nozzle of the second syringe and a surface of the alignment plate.

24. The method according to claim 23, wherein the surface of the alignment plate attached to the table is coplanar to a surface of a substrate of a liquid crystal display panel loaded onto the table.

25. The method according to claim 12, wherein the first and second alignment marks have horizontal and vertical patterns.

26. A method for aligning a dispenser, comprising:

detecting a position of a second alignment mark formed using a first syringe on an alignment plate of a table;

moving the table along at least one of X- and Y-directions to align the position of the second alignment mark with a first reference position;

detecting a position of a first alignment mark formed on the table; and

aligning the position of the first alignment mark with a second reference position.

27. The method according to claim 26, wherein the detecting a position of the second alignment mark includes a first camera.

28. The method according to claim 26, wherein the detecting a position of a first alignment mark includes a second camera.

29. The method according to claim 28, wherein the aligning the position of the first alignment mark with a second reference position includes moving the second camera along at least one of the X- and Y-directions.



30. The method according to claim 26, further comprising:
- loading a substrate of a liquid crystal display panel onto the table; and
  - forming a seal pattern on the substrate using at least one second syringe after the aligning the position of the first alignment mark with a second reference position.
31. The method according to claim 30, wherein a surface of the alignment plate attached to the table is coplanar to a surface of the substrate loaded onto the table.
32. The method according to claim 30, wherein the seal pattern includes an opening.
33. The method according to claim 30, wherein the seal pattern includes a closed loop pattern.

34. A dispenser alignment system, comprising:

an alignment plate provided along at least one side of a table, the table having a first alignment mark and the alignment plate having a second alignment mark;

a first image camera detecting an image of the second alignment mark;

a second image camera detecting an image of the first alignment mark; and

an alignment control unit aligning the image of the second alignment mark and a first reference position, and aligning an image of the first alignment mark and a second reference position.

35. The system according to claim 34, wherein the alignment control unit moves the table to align the image of the second reference mark and the first reference position.

36. The apparatus according to claim 34, wherein the alignment control unit moves the second image camera to align the image of the first alignment mark and the second reference position.

37. The system according to claim 34, wherein the alignment control unit comprises:

a first display part displaying the image of the second alignment mark detected by the first image camera and the first reference position;

a second display part displaying the image of the first alignment mark detected by the second image camera and the second reference position; and

a control unit driving the table along at least one of X- and Y-directions to align the image of the second alignment mark and the first reference position, and driving the second image camera along at least one of the X- and Y-directions to align the image of the first alignment mark and the second reference position.

38. The system according to claim 34, wherein a substrate of a liquid crystal display panel is loaded onto the table.

39. The system according to the claim 38, wherein an area of the alignment plate is less than an area of the substrate.

40. The system according to claim 38, wherein a surface of the substrate is coplanar with a surface of the alignment plate.